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FORM PTO-1390 (REV 11-98) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY DOCKET NUMBER	U.S. APPLICATION NO. (If known see 37 CFR 1 5)
72.049	09/889183

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/EP00/02512	21 March 2000 (21.03.00)	23 March 1999 (23.03.99)

TITLE OF INVENTION *Soil Compactor with Power Steering*

APPLICANT(S) FOR DO/EO/US Michel Steffen

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371 (b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c)(2))
   a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371 (c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C.371 (c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 11. To 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. (and references)
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
    ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

JC18 Rec'd PCT/PTO 1 0 JUL 2001

U.S. APPLICATION NO (if known, see 37 CFR 1 5)	INTERNATIONAL APPLICATION NO	ATTORNEY DOCKET NUMBER
09/889183	PCT/EP00/02512	72.049

17. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$1000.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO..... **$860.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445 (a)(2)) paid to USPTO **$710.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$690.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33 (1)-(4)..... **$100.00**

CALCULATIONS PTO USE ONLY					
ENTER APPROPRIATE BASIC FEE AMOUNT =				$ 860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				$ 0.00	
Total claims	9 - 20 =	0	X **$18.00**	$ 0.00	
Independent claims	1 - 3 =	0	X **$80.00**	$ 0.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$260.00**	$ 0.00	
TOTAL OF ABOVE CALCULATIONS =				$ 860.00	
Reduction of ½ for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9,1.27, 1.28).				$ 0.00	
SUBTOTAL =				$ 860.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$ 0.00	
TOTAL NATIONAL FEE =				$ 860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$ 40.00	
TOTAL FEES ENCLOSED =				$ 900.00	
				Amount to be: Refunded	$
				Charged	

a. ☒ A check in the amount of $ 900.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 50-1170 in the amount of $ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-1170. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO
BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ S C
250 East Wisconsin Avenue, Suite 1030
Milwaukee, WI 53202-4232
Telephone (414) 225-9755
Facsimile (414) 225-9753

SIGNATURE

Timothy E. Newholm
NAME

34,400 — REGISTRATION NUMBER

July 10, 2001 — DATE

Form PTO-1390 (REV 11-98)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

National Phase of PCT/EP00/02512

International Filing Date: 21 March 2000

Inventor: Michael Steffen

Title: *Soil Compactor with Power Steering*

Priority: German Application No. 199 13 074.4; Filed 23 March 1999

PRELIMINARY AMENDMENT

DO/EO/US
Director of the U.S. Patent
and Trademark Office
Washington, D.C. 20231

Sir:

This Preliminary Amendment is directed to a new U.S. application as identified above. Please enter this Preliminary Amendment prior to calculating the fees.

Please amend the application as amended as specified above, as follows:

IN THE SPECIFICATION:

Page 1, after the title, insert the heading --BACKGROUND OF THE INVENTION--; and subheading --1. Field of the Invention--.

Page 1, between lines 5 and 6, insert the subheading --2. Description of the Related Art--.

Page 2, between lines 3 and 4, insert the heading --OBJECTS AND SUMMARY OF THE INVENTION--.

Page 3, between lines 2 and 3, insert the heading --BRIEF DESCRIPTION OF THE DRAWINGS--.

Page 3, between lines 13 and 14, insert the heading --DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--.

IN THE CLAIMS:

Before claim 1, between lines 2 and 3, insert --I claim:--

Please substitute claims 1-9 with amended claims 1-9 as shown below in "clean sheet" format. A marked-up version of the amended claims is attached.

1. (Amended) A soil compaction device comprising:
   - a soil contact plate;
   - an oscillator that acts on the soil contact plate, has at least two eccentric masses that rotate in opposite directions whose phase relationship can be adjusted relative to one another by means of a positioning unit; and
   - at least one moving operator element to control the positioning unit :

   wherein a sensor unit is provided to determine the position of the operator element and to produce a signal to control the positioning unit.

2. (Amended) A soil compaction device according to claim 1, wherein the operator element and the sensor unit are attached to a guide handle of the soil compaction device.

3. (Amended) A soil compaction device according to claim 1, wherein the sensor unit has at least one capacitive, inductive or resistive sensor.

4. (Amended) A soil compaction device according to claim 1, wherein the sensor unit has at least one Hall sensor or a reed contact as well as a transmitting element attached to the operator element.

5. (Amended) A soil compaction device according to claim 1, wherein the sensor unit has at least one proximity switch.

6. (Amended) A soil compaction device according to claim 1, wherein the positioning unit has a fluid-activated piston/cylinder unit as well as an electromechanical valve controlled by the signal from the sensor unit to control a fluid stream at the piston/cylinder unit.

7. (Amended) A soil compaction device according to claim 1, wherein two operator elements are provided that move independent of one another and through which the phase relationship of a group of rotating eccentric masses can be changed.

8. (Amended) A soil compaction device according to claim 1, wherein the operator element can be tilted away from a spring effect from a zero position, and in this zero position its overall force resulting from the rotating eccentric masses has no horizontal component.

9. (Amended) A soil compaction device according to claim 1, wherein, in addition to the operator element, a remote control unit is provided with a sending unit that can be spatially separated from the soil compaction device and with a receiving unit attached to the soil compaction device, wherein a signal can be produced by the receiver unit to control the positioning unit.

ABSTRACT OF THE DISCLOSURE:

Please add page 9 as the Abstract of the Disclosure.

REMARKS

This application has been amended to insert headings in the specification, to eliminate multiple dependencies in the claims and otherwise placing the claims into better conformance with preferred USPTO practice without narrowing the claims, and to add an Abstract of the Disclosure. Entry of the amendments and early consideration and allowance are respectfully requested.

No fees are believed to be payable with the submission of this amendment. However, the Director is authorized to charge any fees associated with this or any other communication, or credit any overpayment, to Deposit Account No. 50-1170.

Respectfully submitted,

Timothy E. Newholm
Registration No. 34,400

Dated: July 10, 2001

BOYLE FREDRICKSON NEWHOLM
STEIN & GRATZ S.C.
250 Plaza, Suite 1030
150 East Wisconsin Avenue
Milwaukee, WI 53202
Telephone: (414) 225-9755
Facsimile: (414) 225-9753

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Amended Claims

Patent Claims

I claim:

1. (Amended) A soil compaction device ~~with~~comprising:
   - a soil contact plate ~~(5)~~;
   - an oscillator ~~(1, 2, 3, 4)~~ that acts on the soil contact plate ~~(5)~~, has at least two eccentric masses ~~(3, 4)~~ that rotate in opposite directions whose phase relationship can be adjusted relative to one another by means of a positioning unit ~~(6, 10)~~; and ~~with~~
   - at least one moving operator element ~~(8)~~ to control the positioning unit ~~(6, 10)~~:

   ~~characterized in that~~wherein a sensor unit ~~(11)~~ is provided to determine the position of the operator element ~~(8) (at least one)~~ and to produce a signal to control the positioning unit ~~(6)~~.

2. (Amended) A soil compaction device according to claim 1, ~~characterized in that~~wherein the operator element ~~(8)~~ and the sensor unit ~~(11)~~ are attached to a guide handle ~~(7)~~ of the soil compaction device.

3. (Amended) A soil compaction device according to claim 1 ~~or 2~~, ~~characterized in that~~wherein the sensor unit ~~(11)~~ has at least one capacitive, inductive or resistive sensor.

4. (Amended) A soil compaction device according to claim 1 ~~or 2~~, ~~characterized in that~~wherein the sensor unit ~~(11)~~ has at least one Hall sensor ~~(13)~~ or a reed contact as well as a transmitting element ~~(12)~~ attached to the operator element ~~(8)~~.

5. (Amended) A soil compaction device according to claim 1 ~~or 2~~, ~~characterized in that~~wherein the sensor unit ~~(11)~~ has at least one proximity switch.

6. (Amended) A soil compaction device according to claim 1 ~~one of the above claims~~, ~~characterized in that~~wherein the positioning unit ~~(6)~~ has a fluid-activated piston/cylinder unit as well as an electromechanical valve controlled by the signal from the sensor unit ~~(11)~~ to control a fluid stream at the piston/cylinder unit.

7. (Amended) A soil compaction device according to claim 1 ~~one of the above claims~~, ~~characterize in that~~wherein two operator elements ~~(8)~~ are provided that move independent of one another and through which the phase relationship of a group of rotating eccentric masses ~~(3, 4)~~ can be changed.

8. (Amended) A soil compaction device according to claim 1 ~~one of the above claims~~, ~~characterized in that~~wherein the operator element~~(s)~~ ~~(8)~~ can be tilted away from a spring effect from a zero position, and in this zero position its overall force resulting from the rotating eccentric masses ~~(3, 4)~~ has no horizontal component.

9. (Amended) A soil compaction device according to claim 1 ~~one of the above claims~~, ~~characterized in that~~wherein, in addition to the operator elements ~~(8)~~, a remote control unit is provided with a sending unit that can be spatially separated from the soil compaction device and with a receiving unit ~~(9)~~ attached to the soil compaction device, wherein a signal can be produced by the receiver unit ~~(9)~~ to control the positioning unit ~~(6)~~.

ABSTRACT

At the end of a guide handle of a vibration plate service as soil-compactor an actuating element is mounted which can be moved in relation to the guide handle. Each position of the actuating element is detected by a sensor device which transmits a corresponding signal to a hydraulic steering unit. In this way, the phase angles of unbalance masses can be modified which in turn influences the direction of travel of the vibration plate.

Soil Compactor with Power Steering

This invention pertains to a soil compaction device according to the preamble of patent claim 1.

Soil compaction devices of this type, for example a vibration plate with the type designation "Wacker DPU 7060", are well known and have proven themselves in practice to be excellent, especially in compacting mainly coarse-grained or weakly agglomerating soils. Here, an oscillator driven by a motor is attached to a soil contact plate and sets the soil contact plate into vertical oscillation which then is transferred to the soil. The oscillation produced usually has a constant or even a variable horizontal force component that provides a forward, backward or steering motion of the vibration plate. In the process, the horizontal motion of the vibration plate is supported by the operator through a center guide post or a guide handle. At the center guide post, an operating lever can be provided that is coupled to hydraulic valves, with the help of which the direction of motion of the vibration plate can be adjusted using a hydraulic positioning system. Another known method is to perform the steering and direction functions using a remote control unit. In these remote controlled plates, the steering is commonly done by providing the oscillator with separate eccentric weights that are adjusted so as to work against one another and produce a circular or yawing motion of the machine.

Even with remote controlled vibration plates, the operator can always manually control the motion or steering process by pulling on the guide handle. The operator must press buttons on the remote control and at the same time pull buttons on the guide handle. This requires a large amount of force since the guide handle of remote controlled machines is much shorter than the center guide posts of non remote-controlled machines. Since the operator must simultaneously activate other operator elements der control such as control sticks, pushbuttons or the like, he can only hold the guide handle with one hand. This type of operation is very strenuous for the operator and thus is not beneficial to work progress.

The objective of this invention is to provide a soil compaction device that is easy for the operator to manually steer even when it is equipped with a remote control unit or with pushbuttons on an operator panel.

This objective is met according to the invention by a soil compaction device with the features of patent claim 1. Advantageous developments of the invention are found in the dependent claims.

This invention is characterized in that a sensor unit is provided to determine the position of at least one operator element. This sensor produces a signal to control a positioning unit for the oscillator. This makes it possible for the operator to activate the positioning unit through the operator element without the need to provide additional cost-intensive and maintenance-intensive hydraulic valves at the operator element – as is the state of the technology.

In an especially advantageous development of the invention, the operator element and the sensor unit are attached to a guide handle of the soil compaction device. When the operator now activates the moving operator element, without the expenditure of large amounts of force, and thus moves it from an initial position, the change in position is detected by the sensor unit and a corresponding signal is sent to the positioning unit. In a known fashion, the positioning unit changes the position or phase of the rotating eccentric masses with respect to one another, whereupon the horizontal component of the resultant overall force changes and a change in the directional behavior of the vibration plate is produced.

Suitable operator elements include – depending on the equipment of the vibration plate – one or two handles that are moveable together or separately. Furthermore, the operator element can also be designed in the form of a "joystick".

It is especially advantageous if the invention is used in vibration plates with remote control wherein the device itself has only pushbuttons – if it has any at all – for the direct actuation of hydraulic valves of the hydraulic positioning unit at it has only a short guide handle. Having an additional moving operator element with a sensor unit ensures that the operator

can comfortably guide the vibration plate in the same way as a vibration plate without remote control.

This and other features and advantages of the invention are explained in more detail below using an example and with the help of the accompanying figures.

Shown are:

Fig. 1 a schematic side view of a soil compaction device according to the invention:

Fig. 2 a top view of the soil compaction device, and

Fig. 3 a schematic sectional enlargement of the operator area of Fig. 2.

Fig. 1 shows a soil compaction device according to the invention in a schematic side view in the form of a vibration plate whose basic design is known and is only briefly depicted below.

A motor, not shown, drives two shafts 1, 2 in opposite directions through a drive unit in the direction of the arrow in Fig. 1. Each shaft has an eccentric mass, 3, 4, respectively, on it. The rotation of the eccentric masses produces an essentially vertically directed oscillation that is transferred to the soil to be compacted by means of a soil contact plate 5.

The shafts 1, 2 as well as the eccentric masses 3, 4 can each be separated in the axial direction so as to produce a yawing moment – at the right phase relationship – which makes the vibration plate rotate at a point or – with simultaneous forward motion – travel about a curved radius.

The change of the phase relationship of the shafts 1, 2 to one another as well as the phase relationship of two eccentric masses on one shaft is done using a known positioning unit in which suitable control elements, not shown, are shifted by means of a hydraulic system 6, which is also a part of the positioning unit.

The fluid stream in the hydraulic system 6 can be influenced in various ways according to the state of the technology:

There are vibration plates known with a control handle 8 at the end of a center guide post 7 or guide handle 7 serving as an operator element. This control handle tilts at the end of the center guide post 7 and directly activates a hydraulic valve belonging to the hydraulic system 6.

In a remote-controlled vibration plate, a receiver unit 9 is provided at the vibration plate that receives radio or infrared signals from a sending unit, not shown. It is also common to receive electrical signals over a cable remote control unit. The signals are converted in the receiver unit 9 and actuate electromagnetic valves provided in the hydraulic system 6 through a hydraulic system controller 10.

These types of remote-controlled vibration plates primarily have the center guide post 7 designed as a short guide handle. Moreover, there are often no additional operator elements provided on the vibration plate itself since the operation is to be done through the sending unit only. For cable remote control systems, however, vibration plates are known in which the sending unit can be inserted into a corresponding receptacle in the vibration plate and then be used as an operator panel.

In manually correcting the motion of the vibration plate, the operator must pull the short guide handle with one hand and at the same time activate the remote control or suitable pushbuttons on the operator panel with the other hand in order to attain the desired motion of the vibration plate.

In order to make this easier for the operator, an additional moving control handle 8 is provided on the short guide handle 7 whose change in position does not directly cause a change in the position of a hydraulic valve, but rather is detected by a sensor unit 11 that is likewise located at the end of the guide handle 7.

The sensor unit 11 can be constructed in the form of a Hall generator, a proximity switch or can be built of reed contacts. It converts the respective position of the control handle 8 into

an electrical signal that is fed to the hydraulic system controller 10. As sensors for the sensor unit 11, capacitive, inductive and resistive sensors are suitable and must be located near the control handle 8.

In the hydraulic system controller 10, the signal is electromechanically converted, for example by means of an electromagnetic control element that acts on the hydraulic system 6 and thus influences the phase relationship of the shafts 1, 2, and the eccentric weights 3, 4 in the oscillator.

The steering of the vibration plate is thus accomplished through a type of servo control.

Figures 2 and 3 show a schematic top view of the vibration plate according to the invention, wherein Fig. 3 is a sectional enlargement of Fig. 2.

At the end of the center guide post 7, there are two control handles 8 serving as operator elements where the operator can guide the machine. Each of the control handles 8 can be rotated relative to the center guide post 7 resulting in the motion or steering behavior of the vibration plate changing. Instead of the center guide post 7, the control handle 8 can also be located on a shorter guide handle.

Each control handle 8 is inserted into the sensor unit 11 and has a transmitting magnet 12 at its end that is opposite a Hall sensor 13. Through the motion of the transmitting magnet 12 at the hall sensors 13, an electrical voltage is produced that is fed as a signal through a line 14 to the hydraulic controller 10.

To dampen the oscillation of the control handle 8, a rubber element 15 can be attached in the form of a collar.

Instead of the Hall sensor 13 described, other sensor units are also possible, for example proximity switches, reed contacts, etc.

If, as shown in Fig. 2, two independently moving control handles 8 are provided, not only can the direction of travel (forward, backward, standstill) of the vibration plate be adjusted, but

also a steering or circular motion can be accomplished, provide the oscillator is so equipped.

The control handle 8 can moreover be acted upon by a spring, not shown, in order to be held in a zero position when it is not activated so that the vibration plate always falls back into a safe state in its zero position. In this state, it makes no motion of its own outside of its vertical oscillatory motion. In the zero position, the horizontal forces produced by the eccentric weights neutralize each other such that the resulting overall force has no horizontal component.

Patent Claims

1. A soil compaction device with
   - a soil contact plate (5);
   - an oscillator (1, 2, 3, 4) that acts on the soil contact plate (5), has at least two eccentric masses (3, 4) that rotate in opposite directions whose phase relationship can be adjusted relative to one another by means of a positioning unit (6, 10); and with
   - at least one moving operator element (8) to control the positioning unit (6, 10):

   characterized in that a sensor unit (11) is provided to determine the position of the operator element (8) (at least one) and to produce a signal to control the positioning unit (6).

2. A soil compaction device according to claim 1, **characterized in that** the operator element (8) and the sensor unit (11) are attached to a guide handle (7) of the soil compaction device.

3. A soil compaction device according to claim 1 or 2, **characterized in that** the sensor unit (11) has at least one capacitive, inductive or resistive sensor.

4. A soil compaction device according to claim 1 or 2, **characterized in that** the sensor unit (11) has at least one Hall sensor (13) or a reed contact as well as a transmitting element (12) attached to the operator element (8).

5. A soil compaction device according to claim 1 or 2, **characterized in that** the sensor unit (11) has at least one proximity switch.

6. A soil compaction device according to one of the above claims, **characterized in that** the positioning unit (6) has a fluid-activated piston/cylinder unit as well as an electromechanical valve controlled by the signal from the sensor unit (11) to control a fluid stream at the piston/cylinder unit.

7. A soil compaction device according to one of the above claims, **characterize in that** two operator elements (8) are provided that move independent of one another and through which the phase relationship of a group of rotating eccentric masses (3, 4) can be changed.

8. A soil compaction device according to one of the above claims, **characterized in that** the operator element(s) (8) can be tilted away from a spring effect from a zero position, and in this zero position its overall force resulting from the rotating eccentric masses (3, 4) has no horizontal component.

9. A soil compaction device according to one of the above claims, **characterized in that** in addition to the operator elements (8), a remote control unit is provided with a sending unit that can be spatially separated from the soil compaction device and with a receiving unit (9) attached to the soil compaction device, wherein a signal can be produced by the receiver unit (9) to control the positioning unit (6).

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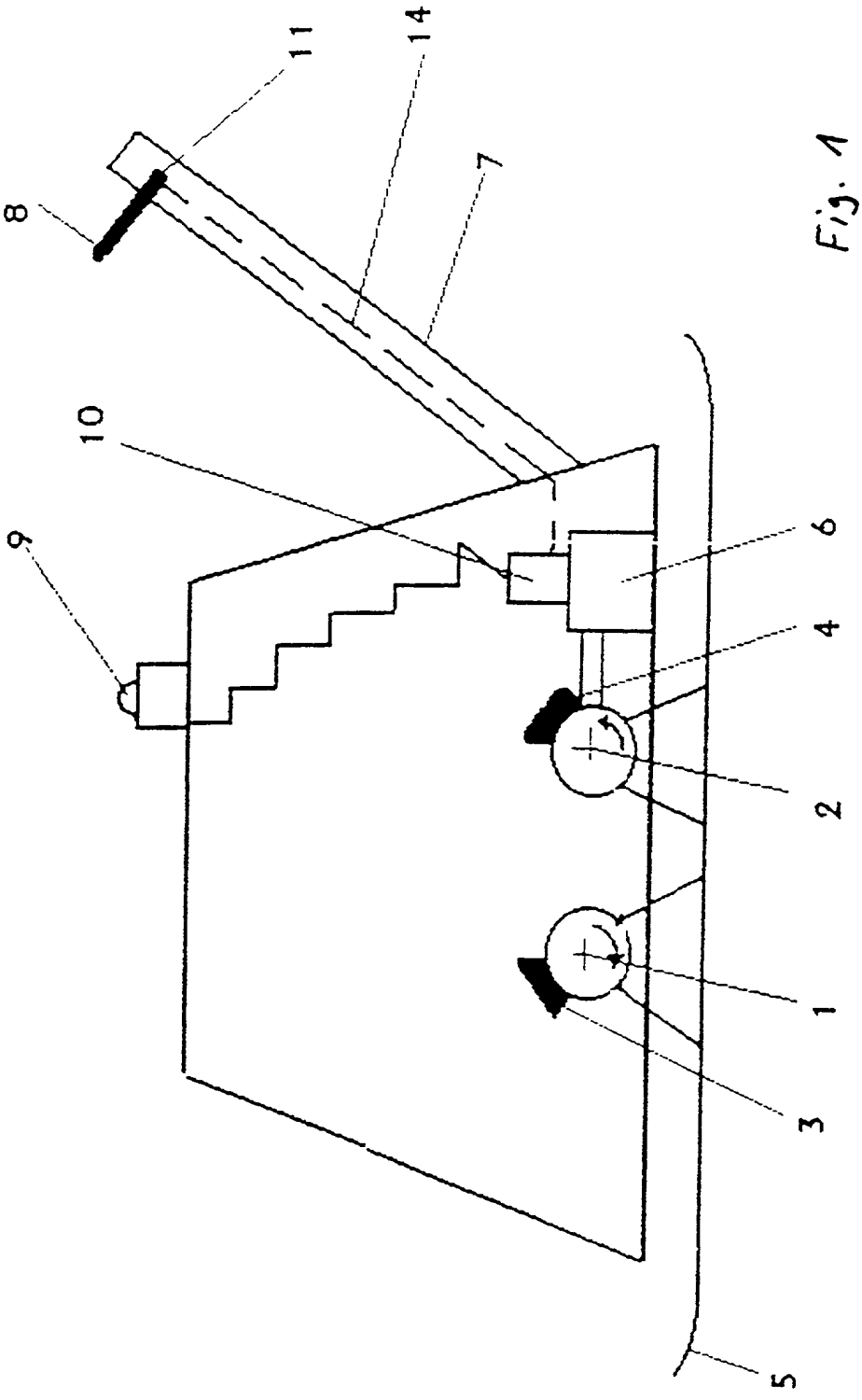

Fig. 1

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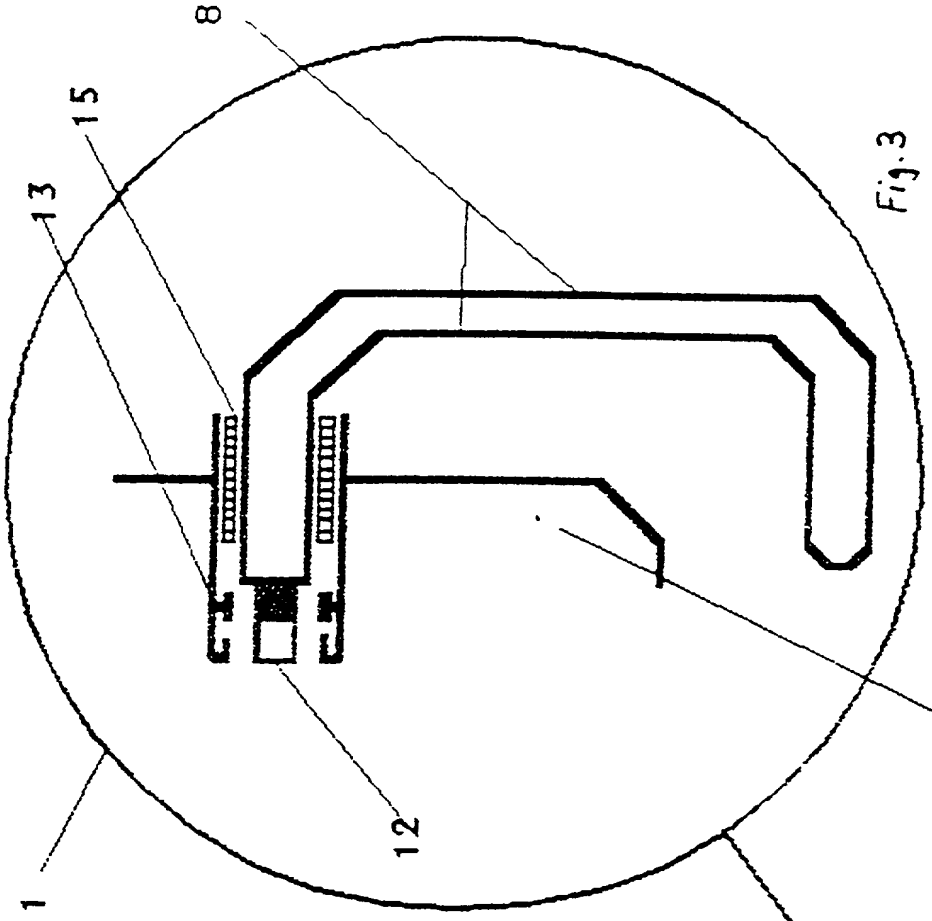

Fig. 3

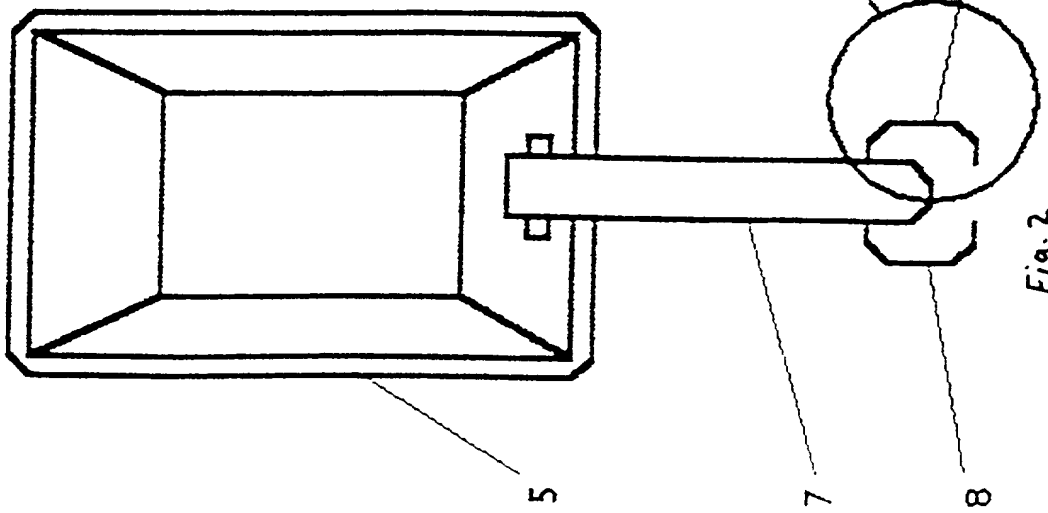

Fig. 2

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **SOIL COMPACTOR WITH POWER STEERING**, which is described and claimed in

☑ the attached specification.

☐ the specification in application _____, filed on _____ and amended on _____ (if applicable).

☐ international (PCT) application No _____, filed on _____ and as amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is known to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1 56

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Claimed
199 13 074.4	Germany	23 March 1999	☑ Yes ☐ No
(Number)	(Country)	(Day/Month/Year Filed)	
PCT/EP00/02512	PCT	21 March 2000	☑ Yes ☐ No
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is known to be material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1 56 which occurred between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number)	(Filing Date)	(Status - Patented, Pending, Abandoned)
(Application Number)	(Filing Date)	(Status - Patented, Pending, Abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: James F Boyle, Reg. No 33,653, Timothy E Newholm, Reg. No. 34,400, Peter C. Stomma, Reg. No. 36,020; David D. Stein, Reg. No. 40,828, Michael J Gratz, Reg. No 39,693, Mary E Eberle, Reg. No. 43,599; Peter C. Stomma, Reg. No 36,020; Andrew S McConnell, Reg. No. 32,272; and Mathew E. Corr, Reg. No 45,434.

Address all telephone calls to **Timothy E. Newholm** at telephone number (414) 225-9755, facsimile number (414) 225-9753.

Address all correspondence to: **Timothy E. Newholm**
BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ S.C.
250 Plaza, Suite 1030
250 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name): Michael STEFFEN

Inventor's signature: Michael Steffen DEX Date: June 28, 01

Residence: Stockdorf, Germany Citizenship: Germany

Post Office Address: Kreuzweg 32
D-82131 Stockdorf, GERMANY